

# MIC-1816

## 16-Bit, 1MS/s, 16-Ch DAQ Platform with Intel® Core™ i3/Celeron® Processor

**NEW**



### Features

- 16 x Analog inputs, up to 1 MS/s, 16-bit resolution
- 2 x Analog outputs, up to 3 MS/s, 16-bit resolution
- Supports digital and analog triggers
- 24 x Programmable digital I/O lines
- 2 x 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)
- 2 x RS-232 ports
- 2 x 10/100/1000 Base-T RJ-45 LAN ports
- 2 x USB 2.0 and 2 x USB 3.0 ports

#### MIC-1816-S4A1E

- Intel® Celeron® 1047UE processor, 1.4 GHz

#### MIC-1816-S6A1E

- Intel® Core™ i3-3217UE processor 1.6 GHz



## Introduction

MIC-1816 is a stand-alone automation controller featuring an integrated DAQ module and signal conditioning to provide digital I/O, analog I/O, and counter functions. This application-ready controller also supports serial communication ports and several other networking interfaces to enable seamless integration and rapid system development.

## Specifications

### Analog Input

- Channels** 16-ch single ended, 8-ch differential
- Resolution** 16 bits
- Sample Rate** Single channel: 5 MS/s max.;  
Multiple channels: 1 MS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be  $1\text{MS}/4 = 250\text{ kS/s}$  per channel.

- Trigger Reference** Digital and analog triggers
- Trigger Mode** Start, Delayed Start  
Stop, Delayed Stop
- FIFO Size** 4,000 samples
- Overvoltage Protection** 30 Vp-p
- Input Impedance** 1 GΩ
- Sampling Modes** Software and external clock
- Input Range** Software programmable

Gain	0.5	1	2	4	8
<b>Unipolar</b>	NA	0-10	0-5	0-2.5	0-1.25
<b>Bipolar</b>	±10	±5	±2.5	±1.25	±0.625
<b>Gain Error (%FSR)</b>	0.1	0.1	0.2	0.2	0.4

### Analog Output

- Channels** 2
- Resolution** 16 bits
- Sample Rate** 3 MS/s max.
- Output Range** Software programmable

Output Range	Internal Reference	0V-5V, 0V-10V, ±5V, ±10V	
	External Reference	Reference Input	Maximum Range
	Unipolar	0 ~ x V	
	Bipolar	-10V ≤ x ≤ 10V	-x V ~ x V

### Digital I/O

- Channels** 24
- Compatibility** 5 V/TTL
- Input Voltage** Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.
- Output Voltage** Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.
- Output Capability** Sink: 15 mA @ 0.8 V  
Source: 15 mA @ 2.0 V

### Counter

- Channels** 2
- Resolution** 32 bits
- Compatibility** 5 V/TTL
- Max. Input Frequency** 10 MHz
- Pulse Generation** Yes
- Timebase Stability** 50 ppm

### General

- Dimensions (W x H x D)** 165 x 59 x 130 mm (6.49" x 2.32" x 5.11")
- Power Consumption** 45 W (typical)
- Power Requirements** Single 12V<sub>DC</sub> power input
- Weight** 2.4 kg (typical)
- OS Support** Windows 10 and Windows 7

### System Hardware

- CPU** Intel® Celeron® 1047UE processor, 1.4 GHz (MIC-1816-S4A1E)  
Intel® Core™ i3-3217UE processor, 1.6 GHz (MIC-1816-S6A1E)
- Memory** 4G DDR3
- Indicators** LEDs for Power, IDE and LAN (Active, Status)
- Keyboard/Mouse** USB
- Storage** 1 x 2.5" SSD

### Environment

- Storage Humidity** 5 ~ 95% RH, non-condensing
- Operating Temperature** 0 ~ 50 °C (14 ~ 140 °F) @ 5 ~ 85% RH with 0.7m/s air flow
- Storage Temperature** -20 ~ 80 °C (-4 ~ 176 °F)

## Ordering Information

- MIC-1816-S4A1E** DAQ platform with Intel® Celeron® 1047UE processor
- MIC-1816-S6A1E** DAQ platform with Intel® Core™ i3-3217UE processor
- 2070015202** img WES7P MIC-1816 64bit 1701 10MU1

## Optional Accessories

- 1700001714** Power cord (BSMI) 3P, 7A, 125V, 18AWG, 180 cm
- 1702002600** Power cord UL/CSA (USA) 3P, 10A, 125V, 1.83 m, 180 D
- 1700023535-01** Power cord (CCC) 3P, 16A, 250V, 183 cm
- 1960077844N001** Table mount (130 x 175 mm)

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